AMENDMENTS TO THE CLAIMS:

Claims 1-10 (Canceled)

11. (Original) A wavelength compensation method in an arrayed waveguide grating module comprising:

a monitor light inputting step of inputting a monitor light for check from either one of the input waveguides with respect to an arrayed waveguide grating module with an arrayed waveguide grating including one or more input waveguides, an input side slab-waveguide connected to the output side of the input waveguide or waveguides, a plurality of arrayed waveguides formed on the side of the input side slab-waveguide opposite the input waveguide or waveguides, an output side slab-waveguide connected to the other terminal of the arrayed waveguides, a plurality of first output waveguides connected to the output side slab-waveguide on the side thereof opposite the arrayed waveguides and at least one second output waveguide formed together with the first output waveguides on the side of the output side slab-waveguide opposite the arrayed waveguides, the afore-said components being all formed on a substrate and the optical spectrum outputted from the second output waveguide being different from the optical spectra outputted from the other output waveguides; and

a wavelength compensation step of performing wavelength compensation with respect to the lights outputted from the first waveguides at the time of the light input from the input waveguides by detecting the monitor light outputted from the second output waveguide on the basis of the monitor light inputting step.

12. (Original) A wavelength compensation method in an arrayed waveguide grating module comprising:

a monitor light inputting step of inputting a monitor light for check from either one of the input waveguides with respect to an arrayed waveguide grating module with an arrayed waveguide grating including one or more input waveguides, an input side slab-waveguide connected to the output side of the input waveguide or waveguides, a plurality of arrayed waveguides formed on the side of the input side slab-waveguide opposite the input waveguide or waveguides, an output side slab-waveguide connected to the other terminal of the arrayed waveguides, a plurality of first output waveguides connected to the output side slab-waveguide on the side thereof opposite the arrayed waveguides and at least one second output waveguide formed together with the first output waveguides on the side of the output side slab-waveguide opposite the arrayed waveguides, the afore-said components being all formed on a substrate and a connecting portion of the second output waveguide with respect to the output side slab-waveguide having a shape different from the shape of connecting portions of the first output waveguides with respect to the output side slab-waveguide; and

a wavelength compensation step of performing wavelength compensation with respect to the lights outputted from the first waveguides at the time of the light input from the input waveguides by detecting the monitor light outputted from the second output waveguide on the basis of the monitor light inputting step.

13. (Original) A wavelength compensation method in an arrayed waveguide grating module comprising:

a monitor light inputting step of inputting a monitor light for check from either one of the input waveguides with respect to an arrayed waveguide grating module with an arrayed waveguide grating including one or more input waveguides, an input side slab-waveguide connected to the output side of the input waveguide or waveguides, a plurality of arrayed

waveguides formed on the side of the input side slab-waveguide opposite the input waveguide or waveguides, an output side slab-waveguide connected to the other terminal of the arrayed waveguides, a plurality of first output waveguides connected to the output side slab-waveguide on the side thereof opposite the arrayed waveguides and at least one second output waveguide formed together with the first output waveguides on the side of the output side slab-waveguide opposite the arrayed waveguides, the afore-said components being all formed on a substrate and the second output waveguide outputting an optical spectrum different from the optical spectral outputted from the other output waveguides;

an adjusting step of adjusting the arrayed waveguide grating module such that the second output waveguide outputs a monitor light having a predetermined wavelength when the monitor light is inputted in the monitor light inputting step; and

a signal processing starting step of starting a signal processing by inputting actually used lights from the input waveguides of the arrayed waveguide grating module adjusted in the adjusting step and using wavelength compensated lights outputted from the first output waveguides of the arrayed waveguide grating.

14. (Original) A wavelength compensation method in an arrayed waveguide grating module comprising:

a monitor light inputting step of inputting a monitor light for check from either one of the input waveguides with respect to an arrayed waveguide grating module with an arrayed waveguide grating including one or more input waveguides, an input side slab-waveguide connected to the output side of the input waveguide or waveguides, a plurality of arrayed waveguides formed on the side of the input side slab-waveguide opposite the input waveguide or waveguides, an output side slab-waveguide connected to the other terminal of

the arrayed waveguides, a plurality of first output waveguides connected to the output side slab-waveguide on the side thereof opposite the arrayed waveguides and at least one second output waveguide formed together with the first output waveguides on the side of the output side slab-waveguide opposite the arrayed waveguides, the afore-said components being all formed on a substrate and a connecting portion of the second output waveguide with respect to the output side slab-waveguide having a shape different from the shape of connecting portions of the first output waveguides with respect to the output side slab-waveguide

an adjusting step of adjusting the arrayed waveguide grating module such that the second output waveguide outputs a monitor light having a predetermined wavelength when the monitor light is inputted in the monitor light inputting step; and

a signal processing starting step of starting a signal processing by inputting actually used lights from the input waveguides of the arrayed waveguide grating module adjusted in the adjusting step and using wavelength compensated lights outputted from the first output waveguides of the arrayed waveguide grating.

15. (Currently Amended) A waveguide compensation method in an arrayed waveguide grating module according to ~~one of claims 13 and 14~~ claim 13, wherein in the adjusting step the arrayed waveguide grating module is adjusted by controlling the temperature of the arrayed waveguide grating by using a temperature control circuit assembled in the arrayed waveguide grating module such that the second output waveguide outputs a monitor light having a predetermined wavelength.

Claims 16-35 (Canceled)

36. (Original) A wavelength compensation method in an arrayed grating module having an arrayed waveguide grating which includes one or more input waveguides, an input side slab-waveguide with the input side thereof connected to the output side of the input waveguide or waveguides, a channel waveguide array including a plurality of waveguides with lengths progressively increasing by a predetermined waveguide length difference, the input side of the waveguides being connected to the output side of the input side slab-waveguide, an output side slab-waveguide with the input side thereof connected to the output side of the plurality of waveguides constituting the channel waveguide array and a plurality of output waveguides each having one terminal connected to the output side of the output side slab-waveguide, the optical spectrum of the light from a second waveguide, i.e., a monitor light waveguide, as one of the output waveguides connected to the input side of the output side slab-waveguide being different from the optical spectrum of the lights from first waveguides as the remaining output waveguides,

the wavelength compensation method comprising a monitor light inputting step of inputting a monitor light for checking from either one of the input waveguides; and a wavelength compensation step of performing wavelength compensation with respect to the lights outputted from the first waveguides at the time of the light input from the input waveguides by detecting the monitor light outputted from the monitor waveguide on the basis of the monitor light inputting step.

37. (Original) A wavelength compensation method in an arrayed grating module having an arrayed waveguide grating which includes one or more input waveguides, an input side slab-waveguide with the input side thereof connected to the output side of the input waveguide or waveguides, a channel waveguide array including a plurality of waveguides with lengths

progressively increasing by a predetermined waveguide length difference, the input side of the waveguides being connected to the output side of the input side slab-waveguide, an output side slab-waveguide with the input side thereof connected to the output side of the plurality of waveguides constituting the channel waveguide array and a plurality of output waveguides each having one terminal connected to the output side of the output side slab-waveguide, a connecting portion of the second output waveguide, i.e., a monitor light waveguide, with respect to the output side slab-waveguide having a shape different from the shape of connecting portions of the first output waveguides with respect to the output side slab-waveguide,

the wavelength compensation method comprising a monitor light inputting step of inputting a monitor light for checking from either one of the input waveguides; and a wavelength compensation step of performing wavelength compensation with respect to the lights outputted from the first waveguides at the time of the light input from the input waveguides by detecting the monitor light outputted from the monitor output waveguide on the basis of the monitor light inputting step.

38. (Original) A wavelength compensation method in an arrayed grating module having an arrayed waveguide grating which includes one or more input waveguides, an input side slab-waveguide with the input side thereof connected to the output side of the input waveguide or waveguides, a channel waveguide array including a plurality of waveguides with lengths progressively increasing by a predetermined waveguide length difference, the input side of the waveguides being connected to the output side of the input side slab-waveguide, an output side slab-waveguide with the input side thereof connected to the output side of the plurality of waveguides constituting the channel waveguide array and a plurality of output waveguides

each having one terminal connected to the output side of the output side slab-waveguide, the optical spectrum of the light from a second waveguide, i.e., a monitor light waveguide, as one of the output waveguides connected to the input side of the output side slab-waveguide being different from the optical spectrum of the lights from first waveguides as the remaining output waveguides

the wavelength compensation method comprising:

a monitor light inputting step of inputting a monitor light for checking from either one of the input waveguides,

an adjusting step of adjusting the arrayed waveguide grating module such that the monitor light waveguide outputs a monitor light having a predetermined wavelength when the monitor light is inputted in the monitor light inputting step; and

a wavelength compensation step of performing wavelength compensation with respect to the lights outputted from the first waveguides at the time of the light input from the input waveguides by detecting the monitor light outputted from the monitor output waveguide on the basis of the monitor light inputting step.

39. (Original) A wavelength compensation method in an arrayed grating module having an arrayed waveguide grating which includes one or more input waveguides, an input side slab-waveguide with the input side thereof connected to the output side of the input waveguide or waveguides, a channel waveguide array including a plurality of waveguides with lengths progressively increasing by a predetermined waveguide length difference, the input side of the waveguides being connected to the output side of the input side slab-waveguide, an output side slab-waveguide with the input side thereof connected to the output side of the plurality of waveguides constituting the channel waveguide array and a plurality of output waveguides

each having one terminal connected to the output side of the output side slab-waveguide, a connecting portion of the second output waveguide, i.e., a monitor light waveguide, with respect to the output side slab-waveguide having a shape different from the shape of connecting portions of the first output waveguides with respect to the output side slab-waveguide,

the wavelength compensation method comprising:

a monitor light inputting step of inputting a monitor light for checking from either one of the input waveguides;

an adjusting step of adjusting the arrayed waveguide grating module such that the monitor light waveguide outputs a monitor light having a predetermined wavelength when the monitor light is inputted in the monitor light inputting step; and

a wavelength compensation step of performing wavelength compensation with respect to the lights outputted from the first waveguides at the time of the light input from the input waveguides by detecting the monitor light outputted from the monitor output waveguide on the basis of the monitor light inputting step.

40. (Currently Amended) The wavelength compensation method in an arrayed waveguide grating module according to ~~one of claims 13 or 39~~ claim 13, wherein in the adjusting step the arrayed waveguide grating module is adjusted by using a temperature control circuit assembled in the arrayed waveguide grating module such that the monitor light waveguide outputs a monitor light having a predetermined wavelength.

Claims 41-50 (Canceled)

51. (New) A wavelength compensation method in an arrayed waveguide grating module according to claim 14, wherein the adjusting step the arrayed waveguide grating module is adjusted by controlling the temperature of the arrayed waveguide grating by using a temperature control circuit assembled in the arrayed waveguide grating module such that the second output waveguide outputs a monitor light having a predetermined wavelength.

52. (New) The wavelength compensation method in an arrayed waveguide grating module according to claim 39, wherein in the adjusting step the arrayed waveguide grating module is adjusted by using a temperature control circuit assembled in the arrayed waveguide grating module such that the monitor light waveguide outputs a monitor light having a predetermined wavelength.